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*The American Chemical Society.*—December 27-31. President, Dr. Willis R. Whitney, General Electric Company, Schenectady, N. Y.; secretary, Professor Charles L. Parsons, New Hampshire College, Durham, N. H.

*The Geological Society of America.*—December 29, 31. President, Dr. G. K. Gilbert, U. S. Geological Survey; secretary, Dr. E. O. Hovey, American Museum of Natural History, New York City.

*The Association of American Geographers.*—December 30-January 1. President, Professor W. M. Davis, Harvard University; secretary, Professor Albert P. Brigham, Colgate University, Hamilton, N. Y.

*The American Society of Vertebrate Paleontologists.*—December 27-29. President, Dr. J. C. Merriam, University of California; secretary, Dr. E. S. Riggs, Field Museum of Natural History, Chicago, Ill.

*The American Society of Biological Chemists.*—December 28-30. President, Professor Otto Folin, Harvard Medical School; secretary, Professor William J. Gies, 437 West 59th St., New York City.

*The American Physiological Society.*—December 28-30. President, Professor W. H. Howell, Johns Hopkins University; secretary, Dr. Reid Hunt, Hygienic Laboratory, 25th and E Sts., N. W., Washington, D. C.

*The Association of American Anatomists.*—December 28-30. President, Professor J. Playfair McMurrich, University of Toronto; secretary, Professor G. Carl Huber, 1330 Hill St., Ann Arbor, Mich.

*The Society of American Bacteriologists.*—December 28-30. President, Dr. J. J. Kinyoun, Washington, D. C.; secretary, Dr. Norman MacL. Harris, University of Chicago, Chicago, Ill.

*The American Society of Zoologists.*—Eastern Branch, December 28-30. President, Professor Herbert S. Jennings, Johns Hopkins University; secretary, Dr. Lorande Loss Woodruff, Yale University, New Haven, Conn.

*The Entomological Society of America.*—December 29, 30. President, Dr. Henry Skinner, Philadelphia, Pa.; secretary, J. Chester Bradley, Cornell University, Ithaca, N. Y.

*The Association of Economic Entomologists.*—December 28, 29. President, Professor W. E. Britton, Connecticut Agricultural College; secretary, A. F. Burgess, U. S. Department of Agriculture, Washington, D. C.

*The Botanical Society of America.*—December 28-31. President, Professor Roland Thaxter, Harvard University; secretary, Professor D. S.

Johnson, Johns Hopkins University, Baltimore, Md.

*American Nature Study Society.*—January 1. President, Professor C. F. Hodge, Clark University; secretary, Professor M. A. Bigelow, Teachers College, Columbia University, New York City.

*Sullivant Moss Society.*—December 30. President, Professor Bruce Fink, Miami University, Oxford, O.; secretary, Mrs. Annie Morrill Smith, 78 Orange St., Brooklyn, N. Y.

*Wild Flower Preservation Society.*—President, Professor Chas. E. Bessey; secretary, Dr. Charles Louis Pollard, New Brighton, N. Y.

*The American Psychological Association.*—December 29-31. President, Professor Charles H. Judd, University of Chicago; secretary, Professor A. H. Pierce, Smith College, Northampton, Mass.

*The American Anthropological Association.*—December 27-January 1. President, Dr. W. H. Holmes, Bureau of Ethnology; secretary, Dr. Geo. Grant MacCurdy, Yale University, New Haven, Conn.

*The American Folk-lore Society.*—Week of December 30. President, Dr. John R. Swanton, Bureau of American Ethnology; acting secretary, Dr. R. B. Dixon, Peabody Museum, Cambridge, Mass.

*Association of Mathematical Teachers in New England.*—December 28. President, Charles A. Hobbs, Watertown, Mass.; secretary, George W. Evans, Charlestown High School, Boston, Mass.

*Physics Teachers of Washington, D. C.*—Meets in conjunction with American Federation of Teachers. President, W. A. Hedrick, McKinley High School, Washington, D. C.; secretary, Dr. Howard L. Hodgkins, George Washington University, Washington, D. C.

*American Phytopathological Society.*—December 28-30. President, Dr. L. R. Jones, University of Vermont; secretary, Dr. C. L. Shear, U. S. Department of Agriculture, Washington, D. C.

*American Alpine Club.*—December 30. Secretary, Dr. Henry G. Bryant, Room 806 Land Title Building, Philadelphia, Pa.

*American Breeders' Association.*—Meeting of Eugenics Committee. Secretary, Dr. Chas. B. Davenport, Cold Spring Harbor, N. Y.

#### SOCIETIES AND ACADEMIES

##### THE PHILOSOPHICAL SOCIETY OF WASHINGTON

THE 670th meeting was held in the West Hall of George Washington University on November 6, 1909, President Wead presiding. Two papers were read.

*The Application of the Electrical Resistance Thermometer to Pyrheliometry:* Professor C. F. MARVIN, of the U. S. Weather Bureau.

Absolute measurements of solar radiation by the use of actinometers, or pyrheliometers, of the Pouillet type, in which the heating and cooling of a short copper cylinder, more or less filled with mercury, alcohol, etc., can not be made with satisfactory accuracy because of the unequal distribution of heat throughout the mass of the block, the differences in specific heat of the component parts, and the uncertainty as to the exact mass of material involved in the observed temperature change.

Most of the difficulties of the problem are minimized or eliminated by the use of the electrical resistance thermometer. For this purpose a short cylinder is formed, about three centimeters in diameter and a half centimeter long, by winding up two layers of very thin ribbon of pure nickel. Layers of very thin silk insulate the coils of nickel from each other, and the whole is cemented by shellac.

The nickel ribbon serves the double purpose of constituting the substance which receives and absorbs the solar radiation to be measured, and, by its large variation of electrical resistance with temperature, it is itself the thermometer that shows its own mean temperature.

The new construction enables the mass and the specific heat of the block to be determined directly.

A pyrheliometer with equatorial mounting and mechanism for operating the shutter by electrical control was exhibited. The auxiliary apparatus for the electrical measurement of temperature was also explained. Plans were described for measuring the amount of radiation which unavoidably falls upon the instrument from a greater or less portion of the sky within 5° or 10° from the sun.

Tentative preliminary observations using a copper block with a nickel-wire thermometer coil imbedded therein gave results from 6 to 10 per cent. lower than the Ångström pyrheliometer. The specific heat of the block was not accurately known.

*Seasonal and Storm Vertical Temperature Gradients:* Dr. W. J. HUMPHREYS, of the U. S. Weather Bureau.

About one hundred and fifty sounding balloon records, obtained in Europe, were grouped and arranged according to season and to the height of the barometer. On plotting temperature against altitude it was found that during the summer the atmosphere was warmer than in the winter at all

levels from the surface of the earth to the greatest altitude reached; or, that seasonal changes in temperature extend to all sounded altitudes. The grouping of the records according to the height of the barometer showed that during the summer a barometric high commonly is accompanied by air which relative to that in a low, is warm from the ground up to about ten kilometers, or to just below the isothermal layer; but that in the isothermal layer it is relatively cold. During the winter the same relations hold at all levels except near (within two kilometers) the surface of the earth where the air is colder when the barometer is high than when it is low.

Presumably these results are not due to mere pressure differences, but rather to the amount of moisture in the atmosphere which is greatest generally when the barometer is low. This moist air, being a good conductor, will cool, under like exposure, to a lower temperature than will an equal amount of dry air, such as is commonly in a high barometer region, and in so doing will radiate more heat to and through the upper air and thereby correspondingly warm it, hence the cool low and warm upper atmosphere when the barometer is low and the air moist, and the reverse when the barometer is high and the air dry.

R. L. FARIS,  
*Secretary*

THE SCIENTIFIC ASSOCIATION OF JOHNS HOPKINS  
UNIVERSITY

At the meeting of the association in November an interesting lecture was given by Professor B. E. Livingston, the newly elected professor of physiological botany, under the title, "Work of the Desert Laboratory." Professor Livingston presented a brief historical outline of the conception and development of the desert laboratory idea, together with a description of the main botanical features of the country adjacent to Tucson, Ariz., and a consideration of the already excellent material facilities for research at the laboratory. A cursory account of some of the most important problems which have been attacked by the different members of the staff was given, including such topics as the theory of descent and heredity, the physiology of water storage in plants like the cacti, the physiology of parasitism, the special physiological anatomy and morphology of desert species, the physical environmental factors, the ecology of the desert, etc. The lecture was illustrated by lantern slides and photographs.

C. K. SWARTZ,  
*Secretary*